9.06 QALY. The reason of utility cost was U$1,006.03 and U$2,331.98 respectively. According to sensitivity analysis for drug prices (minimum and maximum), NPH was considered alternative more cost-effective in all scenarios. Exchange R$2, 67 = U$ 1.00 (Jan/15) **CONCLUSIONS:** Considering the similarity of the results obtained from the analysis of effectiveness and utility in comparing Glargine versus NPH at MD treatment, it is concluded that the difference remains only in the costs of treatment: Glargine costs are higher.

PDB48

THE COST-EFFECTIVENESS OF CANAGLIFLOZIN VERSUS SITAGLIPTIN AS THIRD-LINE THERAPY IN TYPE 2 DIABETES MELLITUS (T2DM) IN A CANADIAN SETTING

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OBJECTIVES: In Canada, the most commonly utilized oral third-line agent for patients with T2DM inadequately controlled on metformin (MET) and a sulfonylurea (SU) is sitagliptin (SITA). Canagliflozin (CANA), a novel agent that inhibits sodium glucose co-transporter 2 (SGLT2), has demonstrated HbA1c lowering, as well as improvements in weight and systolic blood pressure (SBP). The objective of this analysis was to evaluate the cost-effectiveness of CANA 100 and 300 mg versus SITA 100 mg in patients inadequately controlled on MET + SU in the Canadian setting. **METHODS:** In accordance with the CADTH guidelines for economic evaluations, cost-utility analysis using ECHO-T2DM, a validated economic model, was done to simulate lifetime outcomes and costs of using CANA versus SITA in the third-line setting. Patient characteristics and treatment effects were sourced from a head-to-head study for the comparison of CANA 300 mg to SITA 100 mg. In the absence of a direct comparison of CANA 100 mg versus SITA 100 mg, relative treatment effects for this simulation were obtained from an indirect comparison via Bayesian network meta-analysis (NMA), with baseline patient characteristics sourced from a pooled analysis of two CANA trials (patients on background therapy of MET + SU) that contributed to the NMA. ECHO-T2DM was populated with Canadian costs and utility estimates relevant to the Canadian population. **RESULTS:** Using CANA 300 and 100 mg resulted in mean quality-adjusted life year (QALY) gains of 0.08 and 0.04, respectively, and lower costs of $2,035 and $981, respectively, compared to SITA over 40 years in patients failing to meet glycemic control on MET + SU. Therefore, CANA "dominated" SITA. **CONCLUSIONS:** CANA used as a third-line agent added on to MET + SU background therapy may result in better quality of life outcomes and lower costs when compared to SITA (the most common third-line agent in Canada).

PDB49

A COST-EFFECTIVENESS ANALYSIS OF ALOGLIPTIN IN COMPARISON TO SAXAGLIPTIN

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OBJECTIVES: The association between rare genetic disorders, hereditary fructose intolerance (HFI) or alpha-1 antitrypsin deficiency (A1AT), and type 2 diabetes (T2D) has not yet been investigated. Therefore, the objective of this undertaking was to evaluate the association between both genetic disorders and T2D using four large observational databases and adjust for ascertainment bias. **METHODS:** Patients with a HFI diagnosis (ICD-9: 271.2) or A1AT diagnosis (ICD-9: 273.4) and T2D diagnosis (ICD-9: 250.x0 or 250.x2) were identified in the Truven MarketScan Claims Database (2007-2012), Optum Claims Database (2002-2012), Humedica Electronic Health Records (EHR) Database (2007-2012), and GE Centricity EHR Database (1995-2012). The association between both genetic disorders and T2D was compared to the association between T2D and seven negative control chronic diseases with no established relationship with T2D. **RESULTS:** The unadjusted association between both genetic disorders and T2D was positive and heterogeneous ($p<0.001$) in all four databases. The unadjusted pooled odds ratio (OR) calculated using a random-effects model meta-analysis was 3.48 (95% CI: 2.21-5.46) for HFI and 2.71 for A1AT (95% CI: 1.75-4.20). After pooling all patients and adjusting for the negative controls using a random-effects model meta-analysis, it was found that HFI patients have a 73% increased odds of T2D (ratio of odds ratios [ROR]=1.73, 95% CI: 1.08-2.75) compared to patients with negative control diseases; the association was stronger when utilizing a fixed-effects model meta-analysis (ROR=2.19, 95% CI: 2.07-2.31). The adjusted association between A1AT and T2D was statistically significant in the fixed-effects (ROR=1.33, 95% CI: 1.27-1.40) model meta-analysis but not the random-effects model meta-analysis (ROR=1.35, 95% CI: 0.86-2.12). **CONCLUSIONS:** HFI and T2D were positively associated after adjustment for negative control chronic diseases in both meta-analysis models. Rare disease researchers using observational data to conduct comorbidity analyses can utilize negative controls and multiple datasets to account for ascertainment bias and database heterogeneity, respectively.

PDB50

THE COST-EFFECTIVENESS EVALUATION OF CANAGLIFLOZIN VERSUS DAPAGLIFLOZIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS INADEQUATELY CONTROLLED ON METFORMIN MONOTHERAPY IN SPAIN

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OBJECTIVES: To compare the cost-effectiveness of canagliflozin (CANA) and dapagliflozin (DAPA), two compounds with sodium glucose co-transporter 2 (SGLT2) activity, in dual therapy as add-on to metformin from the Spanish National Health System perspective. Network meta-analyses (NMAs) have found that CANA 300 mg lowers HbA1c more than DAPA 10 mg in dual and triple therapy. Pharmacokinetic and pharmacodynamic differences support these results. Specifically, CANA 300 mg has been shown to reduce the renal threshold for glucose excretion more than DAPA 10 mg, resulting in ~25% greater 24-hour urinary glucose excretion. In addition, CANA 300 mg may transiently block intestinal SGLT1, delaying glucose absorption and reducing postprandial glucose. **METHODS:** The IMS CORE Diabetes Model was used to evaluate the cost-effectiveness of CANA 100 and 300 mg versus DAPA 10 mg using Spanish-specific utilities and cost data. Direct costs were reported in euros and an annual discount rate of 3% was applied to costs and effects. The time horizon used for the economic evaluation was 40 years to reflect the chronic nature of the disease. A randomised, controlled trial of CANA in dual therapy and an NMA were sourced for initial patient characteristics and treatment effects. Results were compared with the willingness-to-pay (WTP) threshold reported for Spain (€30,000/QALY). **RESULTS:** CANA 100 mg dominated DAPA in dual therapy, with 0.061 quality-adjusted life years (QALYs) gained. CANA 300 mg was cost-effective compared to DAPA 10 mg in dual therapy with a cost-effectiveness ratio below the WTP threshold in Spain; QALYs gained were 0.084. **CONCLUSIONS:** These results suggest that adding CANA 100 or 300 mg instead of DAPA 10 mg in patients inadequately controlled on metformin would result in more efficient use of healthcare resources in the Spanish setting.

PDB51

A COST-EFFECTIVENESS ANALYSIS OF DAPAGLIFLOZIN IN COMPARISON TO DIPEPTIDYL PEPDTIDASE 4-INHIBITORS USING A META-ANALYSIS

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OBJECTIVES: Proper glycemic control reduces the frequency of microvascular and macrovascular complications in type 2 diabetes. Many patients require more than one medication to reach goal glycated hemoglobin (A1c) levels. The objective of this study was to assess the cost-effectiveness of dapagliflozin versus the dipeptidyl pepdtidase 4-inhibitors in regards to cost per unit of A1c lowered. **METHODS:** Data for clinical outcomes were abstracted from a meta-analysis comparing the effectiveness of oral diabetes medications added to metformin for type 2 diabetic patients failing to achieve goal Alc levels with metformin alone. All comparisons in the meta-analysis were for a 52 week period. A random effects regression model was utilized to compare dapagliflozin to dipeptidyl peptidase 4-inhibitors in their ability to lower glycemic levels after adjusting for baseline Alc and additional covariates. The costs for the antidiabetic agents were based on published wholesale acquisition costs data for 2014. An incremental cost effectiveness ratio (ICER) was calculated to determine cost per additional percentage point for lowering the A1c from the health payer perspective. **RESULTS:** Dapagliflozin was more effective than dipeptidyl pepdtidase 4-inhibitors in lowering A1c levels and was associated and additional 0.07% lowering of the A1c level after adjusting for covariates. Dapagliflozin was more expensive at an annual cost of $3,470.40 while dipeptidyl pepdtidase 4-inhibitors had an annual costs of $3,405.60. The resulting ICER indicated that there was a cost $926 for each additional percentage point that the Alc was lowered by using dapagliflozin. **CONCLUSIONS:** Dapagliflozin was more effective than dipeptidyl pepdtidase 4-inhibitors in lowering A1c levels, yet it was also more expensive. Decision makers trying to decide whether or not to use these medications must be prepared to decide if the additional benefit is worth the cost.

PDB52

COST-EFFECTIVENESS (CE) ANALYSIS OF EMPAGLIFLOZIN 25MG VERSUS SITAGLIPTIN 100MG IN THE TREATMENT OF PATIENTS WITH TYPE 2 DIABETES MELLITUS (T2DM) WHEN ADDED TO METFORMIN (MET) FROM A MEXICAN PUBLIC INSTITUTIONAL CONTEXT

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OBJECTIVES: To evaluate the CE ratio of empagliflozin 25mg compared to sitagliptin 100mg when added to MET in patients with T2DM. **METHODS:** A discrete event simulation CE model was developed to assess the life years (LY) gained and the treatment related costs associated with the studied alternatives in a 10-year horizon. Relevant clinical outcomes identified where efficacy (HbA1c, systolic blood pressure and weight reductions), safety (severe and non-severe hypoglycemia episodes, urinary and genital infections) and treatment-related complications including discontinuation. The results of a Network-Meta-Analysis where taken as efficacy and safety inputs of the model. Public institutional direct medical costs (2014 purchases and price tabulators) where retrieved to adopt the national health system perspective. A probabilistic sensitivity analysis was performed to endorse the results. **RESULTS:** In the 10-year time horizon adopted, and after running 5000 simulations per treatment arm, sitaglitpin 100mg was estimated to have the highest cost of treatment with $179,124.75 MX against $175,842.69 MX reported by empagliflozin 25mg. A small positive difference of 0.009 in LY gained was to be seen in the empagliflozin 25mg arm with an estimate of 4.166 when compared to the sitagliptin 100mg arm with 4.157. Results in the incremental CE ratio (ICER) favored empagliflozin 25mg as a dominant therapy against sitagliptin 100mg. Results were sensitive to changes in efficacy inputs and costs; probabilistic results were scattered, with a discrete trend towards the cost-saving and cost-effective planes. **CONCLUSIONS:** With a lower cost of treatment at a better LY saved level, empagliflozin was estimated to be a cost-saving alternative versus sitagliptin when added to MET for patients with T2DM.

PDB53

COST-EFFECTIVENESS ANALYSIS OF SECOND-LINE AND THIRD-LINE ANTIDIABETIC DRUGS IN TYEP 2 DIABETES: AN EMPIRICAL, POPULATION-BASED OBSERVATIONAL STUDY FROM TAIWAN

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OBJECTIVES: Assess cost-effectiveness of second- and third-line therapies, respectively, in type 2 diabetes, from the Taiwan's National Health Insurance (NHI) perspective. **METHODS:** Patients, treatment and costs data were gathered from the NHI Research Database linked with the National Mortality Registry. There were five metformin-dual therapy cohorts: a reference - metformin plus sulphonylureas (Met-SU); four comparisons - metformin plus acarbose (Met-ACA), metformin plus